

Decision 13-08-004 August 15, 2013

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding
Policies, Procedures and Rules for the California
Solar Initiative, the Self-Generation Incentive
Program and Other Distributed Generation
Issues.

Rulemaking 12-11-005
(Filed November 8, 2012)

**DECISION TO INCORPORATE SOLAR POOL HEATING SYSTEMS INTO
THE CALIFORNIA SOLAR INITIATIVE – THERMAL PROGRAM**

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DECISION TO INCORPORATE SOLAR POOL HEATING SYSTEMS INTO THE CALIFORNIA SOLAR INITIATIVE – THERMAL PROGRAM

1. Summary

This decision expands the definition of a solar water heating system to include solar pool heating systems at multifamily residential, governmental, educational, and non-profit installations and allows these systems to qualify for incentives under the California Solar Initiative (CSI) Thermal Program. Solar pool heating systems in single-family residential installations are not eligible to receive incentives. Incentives for solar pool heating systems will be incorporated into the current CSI Thermal Program incentive budget. Solar pool heating incentives begin at \$7.00 per estimated annual therm displaced and decline incrementally over the life of the program. Incentive payments will be based on expected annual therms displaced using a modified version of the existing online calculator. The incentive for eligible solar pool heating systems is only available to gas customers who have a final signed-off permit issued by the appropriate permitting agency on or after January 1, 2013. Finally, eligible combination systems that include solar pool heating shall be required to take the Performance Based Incentive.

2. Background

The Commission established the California Solar Initiative (CSI) in 2006, to provide \$3.2 billion in incentives and other support for solar photovoltaic (PV) systems with the goal of installing 3,000 megawatts in the service territories of California's three large investor-owned electric utilities. The Legislature codified the program and adjusted the program's scope and adjusted the Commission's portion of program total cost to \$2.17 billion, later that year. The Commission subsequently modified the CSI program to be consistent with Senate Bill (SB) 1,

including a limit of \$100.8 million for incentives to solar thermal technologies. (See Pub. Util. Code § 2851(b).) The program launched to the public on January 1, 2007.

In October 2007, Governor Schwarzenegger signed Assembly Bill (AB) 1470 (Huffman, 2007), authorizing \$250 million in incentives and other market support for solar water heating systems that displace natural gas, so long as the data collected from the Solar Water Heating Pilot Program (SWHPP) showed that such a program would be “cost effective for ratepayers and in the public interest.” In January 2010, the Commission authorized the creation of the CSI Thermal Program. The CSI Thermal Program combines the \$250 million authorized for natural-gas displacing Solar Water Heating (funded by natural gas ratepayers) with the \$100.8 million allowed for electric displacing Solar Water Heating systems (funded by electric ratepayers and already a part of the CSI general market program).

On September 27, 2012, the Governor signed AB 2249 (Stats. 2012, ch. 607), which became law on January 1, 2013.¹ AB 2249 expanded the definition of solar water heating system to include solar pool heating systems, although single-family residential solar pool heating systems were specifically excluded from the definition of a solar water heating system. Specifically, Public Utilities Code (Pub. Util. Code) Section 2861 is amended to read:

“Solar water heating system” means a solar energy device that has the primary purpose of reducing demand for natural gas through water heating, space heating, or other methods of capturing energy from the sun to reduce natural gas consumption in a home, business, or any building or facility receiving natural gas that is subject to the

¹ The Commission is to implement these changes by July 1, 2013.

surcharge established pursuant to subdivision (b) of Section 2863, or exempt from the surcharge pursuant to subdivision (c) of Section 2863, and that meets or exceeds the eligibility criteria established pursuant to Section 2864. "Solar water heating systems" include multifamily residential, governmental, educational, and nonprofit solar pool heating systems, but do not include single-family residential solar pool heating systems.

AB 2249 removed the requirement that the Commission evaluate data available from the SWHPP before implementing a program of incentives for solar water heating systems. AB 2249 also modified certain eligibility criteria allowing for the installation of solar pool heating systems at government, nonprofit, and educational sites. The bill requires the Commission to determine an appropriate division of funds between solar water heating systems for pool heating versus other purposes.²

The assigned Administrative Law Judge (ALJ) directed the CSI Thermal Program Administrators (PAs) -- namely California Center for Sustainable Energy (CCSE), Pacific Gas and Electric Company (PG&E), and Southern California Gas Company (SCG) -- to conduct a workshop to solicit industry feedback and provide recommendations to the Commission for program implementation. The PAs conducted a workshop on April 23, 2013. Representatives from solar manufacturers, contractors, data service providers and installers participated in the workshop. Subsequently, the PAs designed an implementation plan based on the workshop's constructive dialogue. The PAs filed the implementation plan on May 8, 2013. On May 22, 2013, the Division of Ratepayer Advocates (DRA) filed comments on the proposed implementation

² Pub. Util. Code § 2861.

plan. On May 23, 2013, California Solar Energy Industries Association (CALSEIA) moved for party status. CALSEIA's motion for party status is granted. On May 22, 2013, CALSEIA attempted to file and serve comments but apparently served the wrong service list in error. On June 5, 2013, the assigned ALJ informed CALSEIA that its motion to late-file its comments would be granted. CALSEIA's Motion for Leave to Late-File Comments is granted. On May 31, 2013 the PAs and CALSEIA filed reply comments.

3. Solar Pool Heating System Incentive Implementation Plan

The implementation plan proposed by the PAs is divided into sections on Incentives/Budget, Sizing Requirements, Calculator/Model, Eligibility Requirements, Metering Requirements, Combination Systems, and Capping Incentives.

3.1. Incentives

3.1.1. Proposal and Comments

The implementation plan proposes that incentives begin at \$7.00 per estimated annual therm displaced regardless of which incentive structure is implemented.

CALSEIA agrees that the \$7.00 per annual therm avoided incentive level proposed by the PAs is adequate although it is less than the \$8.00 advocated by industry.³ CALSEIA explains that facility owners and managers focus on the opportunity costs of the expenditures for the purchase of systems of this scale.

³ CALSEIA notes that where a project is required by state law to utilize prevailing wage labor pay scale, \$7.00 may not be adequate. CALSEIA makes no recommendation that such projects be treated differently from an incentive perspective at this time, but contends this fact should be noted.

Based on the experience of its membership, CALSEIA believes facility owners and managers will choose not to make such expenditures unless the return on investment is five years or less. CALSEIA estimates that \$7.00 per annual therm avoided will achieve this goal in most cases.

Although not proposed in the implementation plan, CALSEIA also recommends that the incentive for any system be capped at 50 percent of the project cost. CALSEIA contends that such a limitation will allow the incentive amount to be adequate to stimulate purchases, and the incentive budget to allow for more system installations.

DRA believes the incentive should start at \$4.00 per annual therm displaced as originally proposed by the PAs in an informal poll posted prior to and discussed during the April 23, 2013 workshop. DRA contends that the Implementation Plan attempts to respond to concerns that \$4.00 per therm displaced is too low to significantly increase use of solar pool heating systems without sufficient data on what starting incentive rate would most effectively promote market transformation. DRA asserts that if the initial incentive rate is higher than needed to promote the use of solar pool heating systems, the funds will be depleted and could potentially impact other solar heating technologies. DRA disagrees that all participants require a three to five year payback period on the capital outlay to install solar pool heating systems. DRA notes the Commission's experience that customers in the Self-Generation Incentive Program were willing to accept a payback period of six to ten years and the payback period in PacifiCorp's Solar Incentive program was calculated at 13-14 years. DRA proposes an initial incentive of \$4.00 per annual therm displaced with an option to increase the incentive rate via a Tier-2 Advice Letter if it is subsequently deemed too low.

3.1.2. Discussion

We conclude that the proposed incentive of \$7.00 per estimated annual therm displaced is reasonable. Incentives for solar pool heating are being offered several years into the CSI Thermal Program. The CSI Thermal Program is currently set to end when the funds are exhausted or by December 31, 2017, whichever is earlier. At this point in the CSI Thermal Program, it does not make sense to intentionally set the rate low with the option to reset the rate in six months. The choice to invest in a solar pool heating system is likely to be influenced by the anticipated return on investment. In addition, as noted by the PAs and CALSEIA, solar pool heating systems do not qualify for investment tax credit benefits and, as a result, we find this to support the need for a higher incentive.

The incentive rate for solar pool heating will begin at \$7.00 per estimated annual therm displaced.

3.2. Budget

3.2.1. Option 1

For Option 1, the PAs proposed implementation plan incorporates the solar pool heating system incentive into the current CSI Thermal Program. The shared budget would pay incentives on a first-come first-served basis, regardless of thermal technology. The PAs clarify that while solar pool heating would share an incentive budget with the existing multifamily/commercial program, solar pool heating systems would be given a different incentive rate. The PAs prefer Option 1 because it better conserves administrative dollars and allows the market to determine its own adoption rate. In addition, the PAs believe that by keeping the incentive budgets shared there will be less concern about needing

the Commission to intervene again to shift funds to cover exhausted incentive classes in the future.

The PAs recommend using the same solar pool heating system incentive rate of \$7.00 per estimated annual therm displaced for both Steps 1 and 2 because all PAs have the potential to be in Step 2 of the multifamily/commercial by the time the solar pool heating systems program is implemented. The PAs believe this will create a more fair and technology neutral integration into the current thermal program incentive structure. Incentives decline to \$5.00 and \$3.00 for Steps 3 and 4 as shown in Table 1 below. The PAs reason that the \$7.00 per estimated annual therm displaced is in line with the current multifamily/commercial incentive savings, and takes into account that solar pool heating systems do not qualify for investment tax credit benefits.

The annual therms displaced, shown in Table 1 below, are based on the assumption that in Step 1, 25 percent of applications will relate to solar pool heating, and 75 percent will pertain to other multifamily/commercial program solar thermal technologies. Steps 2-4 assume an even split in applications between pool heating and other multifamily/commercial applications.

Table 1
Solar Pool Heating System Incentive Steps
(Option 1 Proposed Incentive Structure)

Step	Incentive per Annual Therm Displaced for Multifamily/Commercial	Incentive per Annual Therm Displaced for Solar Pools	Maximum Incentive for Multifamily/Commercial SWH projects	Budget Allocation (in millions)	Annual Therms Displaced Multifamily/Commercial (1000)	Annual Therms Displaced Solar Pools (1000)	Annual Therms Displaced Total (1000)
1	\$14.53	\$7.00	\$500,000	\$34	1755	1,214	2,969
2	\$9.88	\$7.00	\$500,000	\$26	1,316	1,857	3,173
3	\$6.55	\$5.00	\$500,000	\$23	1,756	2,300	4,056
4	\$3.13	\$3.00	\$500,000	\$16	2,556	2,667	5,223

The PAs believe that Option 1 is consistent with the Commission's goal to achieve the installation of natural gas-displacing systems that displace 585 million therms over the 25-year life of the systems.⁴ The PAs show in Table 2 a projected 13,588,000 in annual therms saved under the existing multifamily/commercial structure. The PAs project that 15,421,000 annual therms will be saved after adding solar pool heating systems to the incentive structure.⁵ Finally, the PAs believe that the solar pool heating incentive goals will also expand the market for other solar thermal technologies that displace natural gas and positively impact Greenhouse Gas (GHG) reductions.

⁴ See Decision 10-01-022.

⁵ This is based on assumption that the therms saved would be achieved at the lower incentive rate within a given step.

Table 2
Multifamily and Commercial Natural Gas-Displacing System Incentive Steps
(Current Incentive Structure)

Step	Incentive per Annual Therm Displaced	Maximum Incentive for Multifamily/ Commercial SWH projects	Budget Allocation (in millions)	Annual Therms Displaced (1000)
1	\$14.53	\$500,000	\$34	2,340
2	\$9.88	\$500,000	\$26	2,632
3	\$6.55	\$500,000	\$23	3,510
4	\$3.13	\$500,000	\$16	5,106

Although CALSEIA supports Option 1 as proposed, CALSEIA has some concern that the existing multifamily/commercial market could move more quickly into a lower incentive level where the solar pool heating incentive is incorporated into the same budget. However, CALSEIA praises the flexibility of Option 1 and believes such flexibility alleviates much of its concern.

While DRA favors the conservation of administrative costs, it worries that the incentive levels of \$7.00 per annual therm displaced proposed for Steps 1 and 2 would more quickly diminish funding for other multifamily/commercial solar water heating systems.

3.2.2. Option 2

The PAs present Option 2 to address concerns that market transformation may not occur evenly among various thermal technologies if multiple end-uses and technologies are incorporated into the existing multifamily/commercial program using the same incentive budget. Option 2 funds solar pool heating systems separately from the remaining multifamily/commercial incentives using existing Steps 3 and 4 funds. Separating incentive funds, the PAs explain,

prevents solar pool heating systems from triggering drops in the incentive steps for all multifamily/commercial systems or vice versa.

As shown in Table 2 above, Step 3 and Step 4 provide a total of \$39 million in incentives and equate to a projected annual therm savings of 8,616,000 therms. The PAs propose a 3-Step declining incentive structure for the solar pool heating system from these funds as shown in Table 3 below. The PAs explain that Option 2 does not affect Steps 1 and 2 multifamily/commercial incentive or single-family incentive rates. Incentive budgets for each PA are allocated using the same percentages established for the current CSI Thermal Program.

The PAs designed Option 2 to diminish the impact to Steps 1 and 2 of the multifamily/commercial incentives because of the possibility that multifamily/commercial applications could drop from Step 1 to Step 2 prior to launching the solar pool heating system incentive program.⁶ The Option 2 incentive structure is consistent with the energy savings goal set for the CSI Thermal Program. The PAs project that the annual therms to be saved from the multifamily/commercial Step 3 and 4 are 8,616,000 and the annual therms saved from solar pool heating systems to be 8,619,000. Like Option 1, Option 2 supports the goals of expanding the market for other solar thermal technologies that displace natural gas and have an impact on GHG reductions.

The PAs propose that incentives start at \$7.00 per estimated annual therm displaced decreasing in three steps as shown below in Table 3. Step changes in

⁶ Implementation of the solar pool heating incentive program requires modification of the CSI Thermal Program Handbook and expansion of the database to accept solar pool heating system applications.

Option 2 move independently by PA territory and will not be impacted by the general market CSI Thermal Program incentive decreases.

Table 3
Multifamily and Commercial Natural Gas-Displacing System Incentive Steps
(Option 2 Proposed Incentive Structure)

Step	Incentive per Annual Therm Displaced	Maximum Incentive for Multifamily/ Commercial SWH projects	Budget Allocation (in millions)	Annual Therms Displaced (1000)
1	\$14.53	\$500,000	\$34	2,340
2	\$9.88	\$500,000	\$26	2632

Table 4
Solar Pool Heating System Incentive Steps
(Option 2 Proposed Incentive Structure)

Step	Incentive per Annual Therm Displaced	Maximum Incentive for Multifamily/ Commercial SWH projects	Budget Allocation (in millions)	Annual Therms Displaced (1000)
1	\$7.00	\$500,000	\$16	2,286
2	\$5.00	\$500,000	\$10	2,000
3	\$3.00	\$500,000	\$13	4,333

3.2.3. Discussion

We adopt the incentive structure presented as Option 1.

We find the incentive structure of both Option 1 and Option 2 consistent with the energy savings goal set for the CSI Thermal Program. In addition, both options support the goals of expanding the market for solar thermal technologies that displace natural gas and have an impact on GHG reductions. However, we conclude that Option 1 is the better approach because it conserves administrative resources by incorporating solar pool heating incentives into the existing multifamily/commercial CSI Thermal incentive structure.

We understand the concern that solar pool heating system incentives could trigger drops in the incentive steps for all multifamily/commercial systems and vice versa. Applications for incentives under the CSI Thermal program for natural gas displacing technologies have not been as robust as the Commission anticipated when the program began. As a result, Option 1 may allow the program to achieve the Commission's CSI Thermal Program goals. If the PAs, solar industry, or the Commission subsequently find that the incentive structure adopted herein is not achieving the program goals, the structure can be adjusted. In addition, we agree with the PAs that it is extremely difficult to predict how the solar thermal market will progress. If necessary to meet program goals, the Commission may reexamine and redistribute the breakdowns of incentive funds adopted by this decision.

3.3. Sizing Requirements

The PAs recommend no sizing cap for solar pool heating systems based on guidelines from existing competitive market conditions. Subsequent to discussions with the solar pool heating industry, the PAs concluded that existing codes, standards, and health regulations place sufficient sizing and installation restrictions on solar pool heating systems. In addition, the PAs note that swimming pools operate at much lower temperatures than domestic hot water loads and there is little to be gained by oversizing a solar pool heating system. The PAs recommend that sizing should be technology neutral and not limited to unglazed collector performance, reasoning that this will drive technology for solar pool heating systems and create a cost-competitive environment.

CALSEIA agrees with that there should be no sizing caps for solar pool heating systems because sizing criteria for solar pool heating systems vary widely based on a number of location-specific factors. CALSEIA believes it

should be the responsibility of the project designer to provide information in the reservation request regarding how the specified solar collector square footage was determined.

We find that no sizing cap for solar pool heating systems is necessary. We agree that existing codes, standards, and health regulations place sufficient sizing and installation restrictions on solar pool heating systems. Finally, sizing should be technology neutral and not be limited to unglazed collector performance.

3.4. Calculator/Model

The PAs recommend that payments be based on expected annual therms displaced using a modified version of the existing online calculator. The PAs propose that Transient System Simulation Tool (TRNSYS) swimming pool Type 344 indoor and outdoor pool model be incorporated into the existing calculator for use by solar pool heating systems. The PAs believe that the historic load profile data gathered for developing load profiles for heating swimming pools is sufficient for calculating incentives based on energy saved and, as a result, a Performance Based Incentive is not necessary. Specific calculator inputs and assumptions will be incorporated into the calculator by the PAs in collaboration with the solar thermal industry, after sensitivity analyses have been conducted.

CALSEIA agrees that a calculator is the preferred method of determining incentives for solar pool heating systems but asks the PAs to accept additional input prior to constructing the calculator. CALSEIA also agrees that a Performance Based Incentive is not necessary, even for larger projects.

The PAs initially recommended that the calculator include the assumption that all pools have a cover and are covered 12 hours per day to encourage energy efficiency. After reviewing comments filed by DRA and CALSEIA, the PAs now

propose that the modeling should not assume a pool cover where it can be demonstrated that local permitting authority, rules, regulations, codes prohibit the use of pool covers for safety reasons. However, the PAs contend that in applications where a pool cover is permitted, the calculator should assume that pools are covered 12 hours per day between November and April of the given year to encourage energy efficiency.

The PAs initially proposed that the calculator assume a pool temperature of 80 degrees but now propose a maximum temperature of 82 degrees based on CALSEIA's comments.⁷

We find the PAs proposal as modified to be reasonable. Incentive payments shall be made on an expected annual therms displaced basis using a modified version of the existing online calculator. The calculator shall incorporate the TRNSYS swimming pool Type 344 indoor and outdoor pool model and will be embedded into the multifamily/commercial application database.

The calculator shall include an assumption that pools are heated to a maximum temperature of 82 degrees. The calculator shall also include the assumption that all pools have a cover and are covered 12 hours per day between November and April of the given year to encourage energy efficiency. However, the calculator should allow for exceptions to the pool cover requirements where applicants show that the local permitting agency disallows the use of pool covers.

⁷ CALSEIA based its recommendation on guidance issued by the American Red Cross. (See CALSEIA May 23, 2013, Comments at 5.)

The PAs are directed to work in collaboration with the solar thermal industry and the Commission's Energy Division to determine the additional calculator inputs and assumptions after sensitivity analyses have been conducted.

3.5. Eligibility Requirements

The proposed Implementation Plan sets forth eligibility requirements, permit requirements and an effective date for beginning incentives for solar pool heating systems.

3.5.1. Customer Eligibility

The incentive for solar pool heating systems applies to gas customers only. Eligible systems include multifamily residential, commercial, government, educational, and nonprofit solar pool heating systems. Single-family residential pool heating systems are not eligible. The Host Customer must be a natural gas customer of PG&E, SCG, or San Diego Gas & Electric Company (SDG&E). The customer must install the solar pool heating system on a new or existing facility.

3.5.2. Effective Date/Permit Requirements

The PAs recommend that a final signed-off permit issued by the appropriate local permitting agency be a key requirement for determining project completion. The PAs propose that applicants for a solar pool heating system incentive be required to have permits for solar pool heating systems with a final sign-off on or after January 1, 2013. Any system that received a permit sign-off prior to January 1, 2013, would be ineligible for participation in the CSI Thermal Program.

CALSEIA agrees with the proposed plan to allow eligibility for systems with a final permit sign-off on or after January 1, 2013 because it prevents uncertainty.

We find the eligibility requirements and effective date for participation in the CSI Thermal program as proposed to be clear and reasonable. We incorporate these requirements into the solar pool heating incentive program adopted by this Decision.

3.6. Metering Requirements

The existing CSI Thermal Program requires systems with a capacity over 30 kilowatt hours thermal (kWth) to have Customer Performance Monitoring (CPM) to ensure that System Owners can effectively monitor the system's performance. The System Owner bears the cost for the equipment. The PAs recommend that Performance-Based Incentive (PBI) not be required for any solar pool heating system regardless of system size. The PAs believe that the modeling used for calculating incentives is based on historic data and provides sufficient accuracy so that PBI should not be required. The PAs further recommend that no opt-in PBI be allowed for solar pool heating systems.

We find the proposed metering requirements to require systems with a capacity over 30 kWth to have CPM reasonable. Systems owners shall bear the cost of CPM. PBI will not be allowed for solar pool heating systems.

3.7. Combination Systems

The PAs recommend that combination systems that include solar pool heating participate in PBI. The PAs conclude that PBI metering should be required for the whole system and a Professional Engineer be required to provide the ratio of the pool heating load to the other end-use load. The PAs will review the assumptions during the Reservation Review Application process. The solar pool heating system incentive will be prorated from the other end-use incentive during the incentive calculation process using the ratios provided by the Professional Engineer.

We conclude that the proposal to require combination systems that include solar pool heating to take PBI is reasonable. For such combination systems, we require CPM for the whole system and applicants must use a Professional Engineer who must provide the ratio of pool heating load to the other end-use load. The solar pool heating incentive shall be prorated from the other end-use incentive during the incentive calculation process using the ratios provided by the Professional Engineer.

3.8. Capping Incentives

CALSEIA recommends that the Commission cap incentives for solar pool heating systems at 50% of the project cost. CALSEIA believes that by capping the incentive available at half the project cost, the incentive amount will be adequate to stimulate purchases but it will conserve the incentive budget to allow for more system installations.

The PAs strongly disagree. The PAs argue an incentive cap will create a disincentive for cost declines, which they believe is a major objective of the CSI Thermal Program. The PAs also believe that such a cap would be inconsistent with the existing CSI Thermal Program and add more complexities to application processing. Instead, the PAs request the ability to reduce the incentive amount through filing of a Tier-2 Advice letter if it is determined that solar pool heating system incentives are too high.

We do not believe a cap at 50% of the project cost is necessary at this time. We agree that a cap is inconsistent with the existing CSI and CSI Thermal incentive programs, creates disincentives for cost declines, and adds unnecessary complexity to the application process. We will allow the PAs to file a Tier-2 Advice letter, if they subsequently find incentives are too high.

4. Comments on Proposed Decision

The proposed decision of the Commissioner in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. On July 18, 2013, CCSE and CALSEIA filed comments on the proposed decision. No reply comments were filed. The proposed decision has been modified where appropriate in response to comments.

CALSEIA noted in comments that the proposed decision incorrectly states that it moved for party status on May 24, 2013. The assigned ALJ received an e-mail with the subject line, "R.12-11-005 Motion of CALSEIA Requesting Party Status." The e-mail states, "Attached please find the Motion of the California Energy Industries Association Requesting Party Status filed by the California Solar Energy Industries Association today in R.12-11-005." The assigned ALJ granted party status in response to this May 24, 2013 e-mail request even though the motion attached to this e-mail was a motion for party status in a separate proceeding, Application 12-04-020.

The CSI proceeding takes an inclusive approach to granting party status in order to encourage broad participation. The assigned ALJ estimated that CALSEIA's e-mail motion was made out of an abundance of caution to ensure that CALSEIA's status as a party was maintained in this, the newest CSI Rulemaking proceeding.⁸ As a result, the assigned ALJ granted party status based on CALSEIA's e-mail request.

⁸ CALSEIA correctly states it was a party in Rulemaking (R.) 06-03-004, R.08-03-008, and R.10-05-004.

5. Assignment of Proceeding

Michael R. Peevey is the assigned Commissioner and Katherine Kwan MacDonald is the assigned ALJ in this proceeding.

Findings of Fact

1. The CSI Thermal program was modified by AB 2249 to allow solar pool heating systems installed in government, non-profit and educational applications to qualify for incentives in the CSI Thermal Program.
2. Solar pool heating systems for single family residential installations do not qualify for incentives under the CSI Thermal Program.
3. A workshop was held on April 23, 2013 to allow the PAs to solicit feedback from industry and provide recommendations to the Commission for program implementation.
4. The implementation plan proposes that incentives for solar pool heating systems begin at \$7.00 and decrease in subsequent steps.
5. Solar pool heating systems do not qualify for investment tax credits.
6. Incorporating the incentives for solar pool heating systems into the existing budget for multifamily/commercial applications conserves administrative dollars.
7. Separating the funding for solar pool heating incentives would prevent such systems from triggering drops in the incentives for multifamily/commercial and vice versa.
8. Applications for incentives under the CSI Thermal Program have not been as robust as anticipated.
9. Existing codes, standards and health regulations place sufficient sizing and installation restriction on solar pool heating systems.

10. Sizing of solar pool heating systems should be technology neutral and not be limited to unglazed collector performance.

11. The historic load profile for heating swimming pools is sufficient for calculating incentives based on energy saved.

12. A calculator is the preferred method for determining the incentive payments for solar pool heating systems based on expected annual therms saved.

13. Pool covers are prohibited in certain locations by local permitting agencies.

14. The existing CSI Thermal Program requires systems with a capacity over 30 kWth to have CPM.

15. System owners bear the cost of CPM.

Conclusions of Law

1. The initial solar pool heating incentive should be set at \$7.00 per annual therm avoided and step down incrementally.

2. An initial incentive of \$7.00 per annual therm avoided should encourage installation of solar pool heating systems because a return on investment of about five years is a reasonable length of time.

3. The incentive program for solar pool heating systems should be incorporated into the existing CSI Thermal program for multifamily/commercial systems because it conserves administrative dollars, will reduce the need for the Commission to intervene to shift funds between programs, and may allow the market to determine its own adoption rate.

4. The incentives for solar pool heating should not be placed into a separate budget because the administrative cost would be higher and would require Commission action to shift funds between programs.

5. Participation in the CSI Thermal program should become more robust through the inclusion of solar pool heating systems for multifamily residential, government, nonprofit and educational systems.

6. Existing codes, standards and health regulation place sufficient sizing and installation restrictions on solar pool heating systems.

7. Incentive payments for solar pool heating systems should be based on expected annual therms displaced using a modified version of the existing online calculator.

8. Incorporating the TRNSYS swimming pool type 344 indoor and outdoor pool model into the existing calculator is reasonable.

9. Calculator inputs and assumptions should include a maximum pool temperature of 82 degrees and that pools are covered for 12 hours per day from November through April of the given year.

10. Where local permitting agencies, codes, statutes, or regulations prohibit the use of a pool cover, the calculator should allow for exceptions to the pool cover requirement.

11. Only gas customers are eligible to receive incentives for solar pool heating systems.

12. Single-family residential pool heating systems are not eligible to receive incentives.

13. The Host Customer receiving an incentive must be a natural gas customer of PG&E, SCG, or SDG&E.

14. The solar pool heating system must be installed on a new or existing facility to qualify for the incentive.

15. In order to be eligible for incentives, each applicant should be required to have permits for a solar pool heating system with a final sign-off from the appropriate local permitting agency on or after January 1, 2013.

16. Systems with a capacity over 30 kWth should be required to have CPM and the system owner should be required to bear the cost of CPM.

17. PBI should not be required for solar pool heating systems and no-opt in PBI program should be allowed.

18. Combination systems that include solar pool heating should participate in PBI.

19. PBI metering for a combined system should be required for the whole system and a Professional Engineer should be required to provide the ratio of the pool heating load to the other end-use load.

20. An incentive cap is inconsistent with the existing CSI and CSI Thermal incentive programs, creates disincentives for cost declines, and adds unnecessary complexity to the application process.

O R D E R

IT IS ORDERED that:

1. The California Solar Initiative Thermal Program is modified as set forth in Appendix A of this decision.

2. Within 45 days of the effective date of this order, the California Solar Initiative (CSI) Thermal Program Administrators (namely, Pacific Gas and Electric Company, Southern California Gas Company, and the California Center for Sustainable Energy) shall jointly file a Tier-2 Advice letter to modify the CSI Thermal Handbook incorporating the changes in this decision and

summarized in Appendix A. These changes to the CSI Thermal Handbook shall become effective 45 days after approval of the Tier-2 Advice Letter.

3. Applicants for solar pool heating system incentives must have permits for solar pool heating systems issued by the appropriate local permitting agency with a final sign-off date on or after January 1, 2013.

4. Rulemaking 12-11-005 remains open.

This order is effective today.

Dated August 15, 2013, at Carmel-by-the-Sea, California.

MICHAEL R. PEEVEY

President

MICHEL PETER FLORIO

CATHERINE J.K. SANDOVAL

MARK J. FERRON

CARLA J. PETERMAN

Commissioners

APPENDIX A

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1. The CSI Thermal Program is modified to add incentives for qualifying Solar Pool Heating Systems as follows:

Solar Pool Heating System Incentive Steps

					Annual Therms Displaced Multifamily/ Commercial (1000)	Annual Therms Displaced Solar Pools (1000)	Annual Therms Displaced Total (1000)
1	\$14.53	\$7.00	\$500,000	\$34	1755	1,214	2,969
2	\$9.88	\$7.00	\$500,000	\$26	1,316	1,857	3,173
3	\$6.55	\$5.00	\$500,000	\$23	1,756	2,300	4,056
4	\$3.13	\$3.00	\$500,000	\$16	2,556	2,667	5,223

2. The Host Customer receiving an incentive must be a natural gas customer of Pacific Gas and Electric Company, Southern California Gas Company, or San Diego Gas & Electric Company.
3. The qualifying solar pool heating system must be installed on a new or existing facility to receive an incentive.
4. Applicants must have permits for the qualifying solar pool heating system with a final sign-off from the appropriate local permitting agency dated January 1, 2013 or later.
5. Systems with a capacity over 30 kWth are required to have Customer Performance Monitoring (CPM). System owners bear the cost of CPM.
6. Combination systems that include a solar pool heating system are required to take a Performance Based Incentive for the whole system and a Professional Engineer must provide the ratio of the pool heating load to the other end-use load.
7. Solar pool heating systems installed in single-family residential applications are not eligible to receive incentives.

(End of Appendix A)